

Instruction Addendum: EVX-2 Marine Electronic Speed Control

Your new model now includes the new EVX-2 Marine Electronic Speed Control. These instructions replace the EVX setup and programming instructions found in your model's Owners Manual. EVX-2 Marine electronic speed controls are factory set and should not require any adjustments. These instructions are provided for your reference.

The EVX-2 Marine uses MOSFET transistors and microprocessor circuitry to deliver efficient, high-frequency operation. The EVX-2 Marine delivers smooth, precise, full-proportional control over your speed in forward and reverse. EZ-Set® push-button setup, multi-color LED, and three easy-to-program drive profiles provide convenient, customized operation. The EVX-2 Marine comes with the peace-of-mind of the Traxxas Lifetime Electronics Warranty and unmatched Traxxas customer support. The EVX-2 Marine is not a toy. It is a sophisticated electronic device capable of delivering large amounts of current. Children under 8 years of age require adult supervision for use of the EVX-2 Marine. If you have questions or need assistance call us at 1-888-TRAXXAS.

Transmitter Adjustments for the EVX-2 Marine ESC

Before attempting to program your EVX-2 Marine ESC, it is important to make sure that your transmitter is properly adjusted (set back to the factory defaults). Otherwise, you may not get the best performance from your speed control.

The transmitter should be adjusted as follows:

1. Set the throttle neutral switch to the 70/30 setting.
2. Set the throttle trim to the middle "0" setting. This adjusts the neutral position.
3. Set the channel 2 servo reversing switch to the left position.
4. Do not change the position of any of the servo reversing switches after programming the EVX-2 Marine ESC.

EVX-2 Marine Setup Programming (Calibrating your ESC and transmitter)
Read through all of the following programming steps before you begin. If you get lost during programming or receive unexpected results, simply unplug the battery, wait a few seconds, plug the battery back in, and start over.

1. Place the boat on a stand and make sure objects and fingers are clear of the propellers.

2. Connect two fully charged battery packs to the EVX-2 Marine.

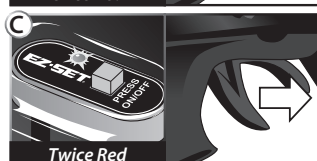
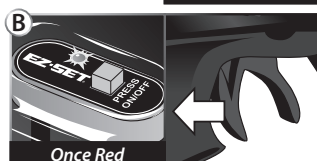
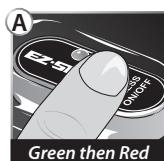
3. Turn on the transmitter (with the throttle at neutral).

4. Press and hold the EZ-Set button (A). The LED will first turn green and then red. Release the EZ-Set button.

5. When the LED blinks RED ONCE. Pull the throttle trigger to the full throttle position and hold it there (B).

6. When the LED blinks RED TWICE. Push the throttle trigger to the full reverse and hold it there (C).

7. When the LED turns solid GREEN, programming is complete. The LED will continuously shine green indicating the EVX-2 Marine is on and at neutral (D).



EVX-2 Marine Operation

To operate the speed control and test the programming, place the boat on a stand so all of the propellers are off the ground. Always make sure that objects and fingers are clear of the props.

1. With the transmitter on, press the EZ-Set button for ½ second, until the LED shines GREEN, then immediately release the button. This turns on the EVX-2 Marine. If you press and release too quickly, you may hear the steering servo jump but the LED may not stay on. Press the button again until the LED shines GREEN and then release. (**Note:** If the throttle is not at neutral or if the throttle trim has been altered, the LED will turn off after one second and the propellers may begin to spin.)
2. Apply forward throttle. The LED will turn off until full throttle power is reached. At full throttle, the led will shine GREEN.
3. Return the throttle trigger to neutral. The LED will shine GREEN.
4. Move the throttle trigger forward again to engage reverse (Profile #1). The LED will turn off. Once full reverse power is reached, the LED will shine GREEN.
5. To stop, return the throttle trigger to neutral. Note that there is no programmed delay when changing from reverse to forward. Use caution to avoid slamming the speed control from reverse to forward. This could result in transmission or driveline damage.
6. To turn the EVX-2 Marine off, press the EZ-Set button until the green LED turns off.

Thermal Shutdown Protection

The EVX-2 Marine is equipped with thermal shutdown protection to guard against overheating caused by excessive current flow. If the operating temperature exceeds safe limits, the EVX-2 Marine will automatically shut down and the remote LED will flash red. The LED will continuously flash red, even if the throttle trigger is moved back and forth. After the speed control cools down to a safe level, the LED will continuously shine green. The EVX-2 Marine will once again function normally.

EVX-2 Marine Profile Selection

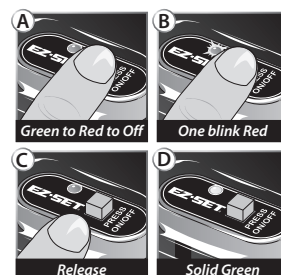
The speed control is factory set to Profile #1. To change the profile, follow the steps on described below. The speed control should be connected to the receiver and battery, and the transmitter should be adjusted as described previously. The profiles are selected by entering the programming mode.

EVX-2 Marine Profile Description

Profile #1 (Sport Mode): 100% Forward, 25% Reverse
Profile #2 (Race Mode): 100% Forward, No Reverse
Profile #3 (Training Mode): 50% Forward, 25% Reverse

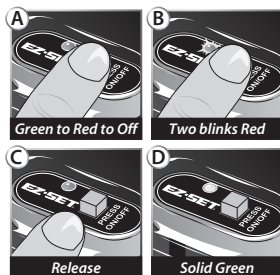
Selecting Sport Mode (Profile #1)

1. Connect two fully charged battery packs to the EVX-2 Marine and turn on your transmitter.
2. With the EVX-2 Marine off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red once, release the EZ-Set button.
4. The light will then turn green and the model is ready to drive.



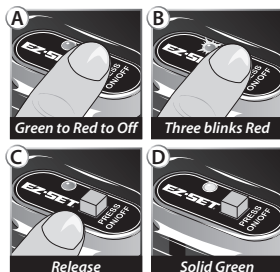
Selecting Race Mode (Profile #2)

1. Connect two fully charged battery packs to the EVX-2 Marine and turn on your transmitter.
2. With the EVX-2 Marine off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red twice, release the EZ-Set button.
4. The light will then turn green and the model is ready to drive.



Selecting Training Mode (Profile #3)

1. Connect two fully charged battery packs to the EVX-2 Marine and turn on your transmitter.
2. With the EVX-2 Marine off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red three times, release the EZ-Set button.
4. The light will then turn green and the model is ready to drive.



Note: If you missed the mode you wanted, keep the EZ-Set button pressed down and the blink cycle will repeat until a Mode is selected.

Specifications:

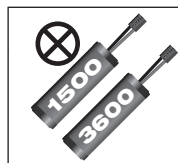
Input Voltage.....	6 to 14-cells (7.2 to 16.8 volts DC)
Case Size.....	2.27"W x 2.00"D x 1.05"H
Weight (heat sinks/no heat sinks).....	4.0 oz / 3.6 oz
Motor Limit (550 Size)*.....	12-turns
On-Resistance-Forward (@Trans).....	0.004 Ohms
On-Resistance-Reverse (@Trans).....	0.004 Ohms
Rated Current - Forward.....	180 amps
Rated Current - Reverse.....	180 amps
Braking Current.....	360 amps
Continuous Current (@100°F amb.).....	30 Amps
BEC Voltage.....	6.0 volts DC
BEC Current.....	2.5 amps
Power Wire.....	14 Gauge / 9"
Switch Harness.....	26 Gauge / 4"
Input Harness Wire.....	26 Gauge / 9"
Transistor Type.....	MOSFET
PWM Frequency.....	1700 Hertz
Protection.....	Thermal Shutdown
Single Button Setup.....	Yes

* Must be properly geared.

EVX-2 Marine General Precautions

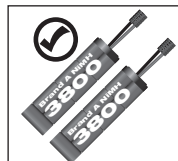
- **No Brakes:** The EVX-2 Marine is not equipped with brakes and should not be used in land-based vehicles.
- **Water and Electronics Do Not Mix:** When operating the EVX-2 Marine, never allow water, moisture, or other foreign materials to get inside the speed control.
- **Disconnect the Batteries:** Always disconnect the battery packs from the speed control when not in use.
- **Transmitter on First:** Switch on your transmitter first before switching on the speed control to prevent runaways and erratic performance.
- **Don't Get Burned:** The transistor tabs and the heat sink can get extremely hot, so be careful not to touch them until they cool.
- **Always Use Heat Sinks:** A water-cooled heat sink is factory-installed on the speed control and must be used for maximum cooling and performance. A steady stream of water should always be visible from the water outlet while the boat is running at speed.

- **6 to 14-cells Only:** Always adhere to the minimum and maximum limitations of the EVX-2 Marine as stated in the specifications table. **Do not mix battery types (NiMH or NiCad), brands or capacities. Use the same voltage and capacity for both batteries.** Using mismatched battery packs could damage the batteries and electronic speed control.



Do not mix battery capacities. Use two batteries with the same capacity.

- **Connectors:** If you decide to change the battery or motor connectors, only change one battery or motor connector at a time. This will prevent accidentally mis-wiring the speed control. If the EVX-2 Marine is not wired exactly as shown in the following diagram, it can be damaged! Please note that modified speed controls can be subject to a rewiring fee when returned for service.

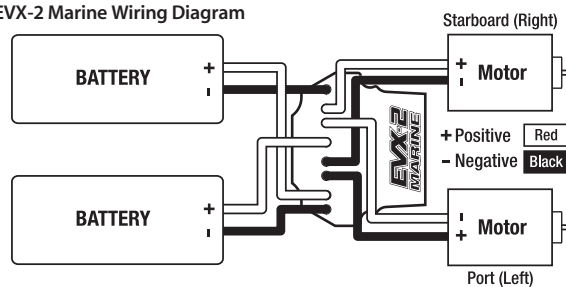


Use batteries that are exactly the same cell type, brand, voltage and capacity.

- **No Reverse Voltage:** The speed control is not protected against reverse polarity voltage. When changing the battery and/or motor, be sure to install the same type of connectors to avoid reverse polarity damage to the speed control. Removing the battery connectors on the speed control or using the same-gender connectors on the speed control will void the product's warranty.

- **Do Not Let the Transistor Tabs Touch:** Never allow the three separate transistor banks to touch each other or any exposed metal. This will create a short circuit and damage the speed control. (For example, laying a metal tool across the transistor tabs can damage the speed control.)

EVX-2 Marine Wiring Diagram



EVX-2 Marine Advanced Precautions

- **Motor Limit:** EVX-2 Marine has a 12-turn 550 modified motor limit when the motor is properly geared. A water cooling kit (Traxxas part #1580) is required for modified motor use in marine applications such as the Villain EX. If the motor or speed control is overheating, try a smaller pinion gear. Do not attempt to use a more powerful motor (fewer turns) than the above mentioned motor limits or you could experience frequent thermal shutdown.
- **Insulate the Wires:** Always insulate exposed wiring with heat shrink tubing to prevent short circuits.
- **Use Neutrally Timed Motors:** For reverse use, the motors must have 0° timing. Modified motors (with adjustable end bells) timed to 0° or Johnson/Mabuchi (closed end bell) motors are recommended. Using motors with other than 0° timing will draw excess current in reverse, and can result in the speed control overheating and premature motor wear.
- **Motor Capacitors Required:** Ceramic capacitors should be properly installed on every motor to prevent radio interference. These are already installed on the factory Titan Marine motor.
- **No Schottky Diodes:** External schottky diodes are not compatible with reversing speed controls. Using a schottky diode with the EVX-2 Marine will damage the ESC and void the 30-day warranty.

If you have questions or need technical assistance, call Traxxas at

1-888-TRAXXAS

(1-888-872-9927) (U.S. residents only)